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13 January 1958

MEMORANDUM FOR: Deputy Director (Intelligence)

SUBJECT : Intelligence Communications and Related Procedures

The Problem

1. This paper concerns both the mechanical and human aspects of intelligence communications from the time that a piece of information is collected until the intelligence judgment based on it is implanted in the minds of the persons whose policy decisions and actions are influenced by it.

2. It discusses the problem of organizing the communications of the intelligence community as a whole. It is not limited to the communications of the Central Intelligence Agency, although it might be desirable for the C.I.A. to manage a communications system along the lines of this model as a service of common concern.

3. This paper is based on two assumptions: (a) that the U.S. seriously intends to take all necessary action to retain control over its own future; and (b) the collection and analysis of technical information is becoming and will continue to become more and more important to the future of the U.S.

4. In an activity as large and complex as the intelligence community the problem of transmitting information from collector to user is necessarily a tremendously complicated business. In our present situation the natural complexity is compounded by the process of unplanned evolution from an archaic past of our communications in

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separate departments and agencies. Rather than examine the present communication system and related organization of the intelligence community, this paper will attempt to construct a model of an ideal mechanical and human system which would take advantage of the advanced technical developments available to us and which would attempt to make the flow of communications keep pace with the increasing speed of world developments and hostile weapons systems.

5. The model of the communications continuum outlined in this paper will be opposed by many people on the grounds that: (a) it will require the development and implementation of a vast array of new relationships and new methods of work; (b) it will be expensive as compared to the present direct expenses for rapid communications and courier services; and (c) many of the changes in detail from our present procedures will involve relatively small gains in time saved or increased efficiency and these gains will seem small when compared to the possible disruption of existing work habits.

6. These objections must be met by a recognition that: (a) custom and established habits must not be allowed to inhibit the ability of the intelligence community to be of maximum service to the U.S.; (b) the cost of a truly effective communications continuum would be small in comparison with the expenses resulting from inadequate intelligence, and an increase in direct communications cost might well be balanced by savings in indirect costs; and (c) no single change in our present organization and work procedures can result in any major saving of time or efficiency, but a great many small changes in organization and procedures can result in a great improvement in the intelligence process.

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7. The present communications system used by the intelligence community is essentially the same as that used by the U.S. Government in 1900. In that era the few copies of dispatches from abroad required in Washington could be typed in an Embassy and the necessary number of carbon copies forwarded to Washington by ship pouch. The only thing that has changed in this procedure is that we need more copies in Washington and, therefore, use stencils instead of carbon paper, and we forward the stencil by air instead of by sea. As a result, there has been a speed-up in the means of transportation but no change in the basic system itself. Dispatches still flow back to Washington to parent departments through many separate channels where distribution is made by mail rooms and secretariats to other interested departments and agencies who in turn route the documents by messenger to subordinate components.

8. In the case of messages transmitted by rapid means there has also been little change in the system in the past 50 or 60 years. Messages are still typed, carried to the code room and enciphered, transmitted, deciphered, reproduced, and distributed by messenger to secretariats who make further distribution inside and outside the parent department. The only speed-up in this system has occurred as a result of the development of radio and more efficient teleprinter machines and cipher machines. The message can be sent across the ocean more rapidly than it formerly could be by the cables of 1900 but approximately the same amount of time is consumed in handling it at both ends of the communications system and these are the areas in which the greatest amount of time has usually been consumed.

9. The analysis of information in Washington and the transmittal

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of intelligence judgments to policy and action officials also continues to be governed by habits developed in a slower tempoed era. The great bulk of information still moves from department to department, from office to office, from desk to desk, in the form of hard copy carried by messengers, and intelligence judgments are believed to have served their purpose once they have been embodied in a formal publication which may drift across the desk of some unknown and unseen policy or action official.

10. Under the present operating procedures of the intelligence community, we are never able to say what the current situation is in the Soviet Union. On a very small number of items, almost never more than one or two a week, we can say what the situation was yesterday or two or three days ago. On other things, perhaps 20 or 50 a week, we can say what the situation was a week or 10 days ago. On the great mass of things, however, we can only say what the situation was two months or three months or six months ago. Many intelligence studies carry a cutoff date which hides a large part of this time lag. The cutoff date indicates that the conclusions of the paper were the best judgment of the analyst on the basis of the information available to him at that time. The date conceals the fact that the information itself probably was several months old and that the situation actually described was considerably older than the cutoff date on the report.

11. The slowness of our communications systems means that we are heavily dependent upon the judgment of people in the field concerning the importance of specific items of information, since they make the initial judgment concerning the method by which the information

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will be forwarded to Washington. It happens frequently, therefore, that information comes in by slow means which would have been of considerable importance in the judgment of Washington analysts had it been received by rapid communications in a timely manner.

12. This model of an intelligence communications continuum is based on these major themes:

- a. connecting all intelligence components and their major consumers in one integrated communications network.
- b. expanding capacity to permit all intelligence to be forwarded by electrical means.
- c. mechanizing and simplifying information handling procedures at both ends of the communications system to permit major savings in distribution time.

The Model

13. A model communications continuum for the intelligence community must be based on the anticipation that in an emergency situation there will be a tremendous increase in all types of communications, operational as well as intelligence. The increase in operational traffic might be so great that circuits normally available to intelligence might no longer be available. It is essential, therefore, that the entire communications system used by the intelligence community be operated and controlled by the intelligence community.

14. The most important period for the rapid forwarding of intelligence in volume from the field is likely to be the period just before and just after the outbreak of hostilities, revolution,

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or other great disturbance. It is essential, therefore, that the actual communications facilities should be as secure as possible against destruction by enemy action. This security could be obtained by the construction of hard sites or dispersed sites in isolated areas not likely to be a target for enemy action. In practice, a combination of these two types would probably be desired.

15. These secure sites could contain the radio transmitters or the termini of the cables used in the actual transmission of the information. For maximum efficiency they should be connected by direct wire teletype with the centers of intelligence operations in the local area abroad.

16. The only way in which a large volume of information can be transmitted rapidly and securely is by the use of on-line cipher machines, and such machinery must be standard equipment for the intelligence communications system. This would still permit highly sensitive operational and administrative traffic to receive hand encipherment or privacy coding before transmission.

17. Information would be transmitted by radio or cable to Headquarters. In the case of radio, it would be desirable to establish systems which transmitted continuous key in order to frustrate enemy traffic analysis while, at the same time, maintaining a 24-hour open circuit. Each medium of transmission has unique advantages and disadvantages which would make it desirable to have both means represented in the system. Cable is more secure and less subjected to natural interference than radio, but is more difficult and expensive to install and can be cut by enemy action. Radio is more flexible in operation and expansion of capacity, but is subject to both natural ^{and} man-made

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interference as well as being relatively less secure than cable.

18. A great deal of time is frequently lost in communications systems in routing traffic through relay points. Where necessary, therefore, relay points should be adequately equipped to provide for automatic relay of traffic received from all out-stations.

19. Some circuits of the communications system should be equipped to handle photo-facsimile material. Information contained in maps, photographys, technical drawings, overlays, weather data, etc., can be forwarded most expeditiously in this manner.

20. The traffic received in Washington from a communications system would be deciphered by on-line cryptographic machinery which would produce a teletype tape. For the great majority of messages this tape would be fed automatically into teletype transmitters connected with teleprinters in the consuming agencies. The originator of the message would have placed an indicator on the message, indicating the general nature of the subject material and the indicator would govern the selection of the teleprinters into which this particular message would be piped. In the case of those ultra-sensitive operational or administrative messages which needed screening before general release, the tape could be fed to the teleprinter of the controlling organization and then re-run for general distribution only if that organization gave a release.

21. The teleprinters in the offices receiving intelligence would use stencil paper so that the necessary number of copies for internal use could be reproduced as soon as the report came off the machine.

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22. In view of the increasing volume of technical information that will be necessary for the security of the U.S., the communications system should have adequate capacity so that tapes containing technical information collected in the field could be transmitted immediately to Washington for analysis. In other words, the communications system should be compatible with the transmission of both textual and technical information.

23. The system should also be devised so that the maximum amount of information is produced by the communications system in tape form that can be fed into computers wherever such rapid handling of mass data is required.

24. The communications system should have adequate capacity to handle all intelligence information now transmitted by cable or in the form of written dispatch. The only information to travel by courier would be that information such as books, maps, pamphlets, etc., which is too bulky to transmit by electrical means. Not only is this desirable but it is well suited to the nature of the intelligence problem. A high volume of traffic similar to that now sent by cable would be generated in times of emergency when the lengthier material now sent by dispatch is less important. In between emergencies capacity that would be idle under present operating procedures would be used for transmitting the material now sent by dispatch, thus keeping circuits filled to a maximum of efficiency, furnishing Washington with a large volume of current information, and keeping available a high communications capacity for emergency situations.

25. As a continuation of the communications system in Washington all key intelligence agencies and their major consumers would be connected by secure teletype making it possible to provide intelligence

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consumers with a raw report from the field almost instantaneously if that were desirable. It would also make it possible to provide the intelligence consumers with a raw report and a preliminary evaluation in a matter of minutes or a more thorough evaluation in a matter of a few hours. The termini of the communications system in the consumers departments and agencies should be staffed by small groups of highly competent intelligence officers who could brief their consumers immediately on the basis of the information received if necessary or could reproduce from the teletype stencil daily compilations of intelligence for a more leisurely circulation within the department to which they were accredited.

26. With the intelligence community operating at the speed envisaged in this communications continuum, it would be extremely difficult to maintain current standards of form and appearance for much of the material passing through the system. This is a small price to pay, however, for the increase in timeliness of the substance.

27. The intelligence community could, of course, continue to publish formal printed studies where time was not too important a factor, but even in this case the printed studies would be much more timely because of the currency of the information on which they were based.

28. The existence of this Washington communications net would make it possible to take into account the current needs of consumers much more fully and much more rapidly than can be done at present. Since a request for information could, if necessary, be transmitted from the consumer to the field in a matter of minutes or hours.

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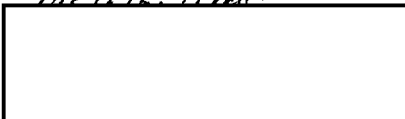
29. The establishment of a communications continuum such as that described above would require the establishment of a knowledgeable and rapidly acting coordinating center in Washington and would make highly desirable the establishment of comparable coordinating centers representing all collection agencies in various centers of intelligence activities abroad.

Conclusion

30. The construction of a communications system along the line of the model would involve a heavy initial investment in equipment, facilities, and communications personnel. Once in being, its daily operation might well be more expensive than the current ^{not} system. If the same results can/be achieved by other means, however, the intelligence community may have to face the hard fact, that it must pay the necessary sums to put this model into effect if it is to do the job that it is expected to do for U.S. security.

31. There are many obvious difficulties to inhibit the establishment of a communications continuum such as that described in this model. None of these difficulties should be insurmountable if there is a determination in the intelligence community to make our knowledge of events affecting the security of the U.S. keep pace with the events themselves.

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Assistant to DD/I (Planning)

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